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1. Introduction

Museums are more important than ever before. They play a substantial role in people's leisure activities and belong to one of the most important tourist attractions. Substantial amounts of money are spent when visiting museums both in terms of entry fees and expenditures in museum restaurants and shops. The visitors have a strong effect on local economies, especially in touristic locations. Not surprisingly, therefore, more and more museums are founded usually in spectacular new buildings.

There are many different types of museums. It is useful to distinguish four aspects: *Content*. Most importantly art, historical artifacts, scientific objects, and many other exhibits of general and sometimes very specific interest; *Size*. Some museums occupy a huge amount of space, employ a large number of staff and have many thousands of visitors per day; others are of only local interest, are small, with very restricted opening hours, are run by a amateur staff, and have few visitors; *Age*. There are museums with a long and distinguished history while others are newly

founded; and *Institutional form*. Traditionally, European museums have been public, even forming part of the normal government administration. But there have always been private museums. Most museums lie somewhere in between public and private. Thus, for instance, almost all private museums receive some form of government subsidy, often by making contributions by donors exempt from taxes.

However, all museums share some particularities and similar functions.¹ This survey analyses all the different kinds of museums and points out where differences in the above mentioned dimensions are crucial for the analyses of the specific museums.

The term “Economics of Museums” may be understood in two different ways:

Museums may be looked at as an *economic unit*, or a firm providing certain services. One then analyses the relationship between the input (exhibits, manpower etc.) and output in terms of revenue gained. Moreover, the effect of museums on the economy is analysed, e.g. how much employment and what value added is created in other sectors.

The economic approach of thinking is applied to the case of museums: Individuals are assumed to pursue their utility within the constraints imposed by institutions and the environment, especially the scarce resources. This methodology has been applied to many different areas, such as to politics, law, history, sports, or religion (see Becker, 1976; Hirshleifer, 1985; Kirchgässner, 1991; Frey, 1999). The economics of museums thus clearly distinguishes itself from other approaches to studying museums, in particular the sociology of museums or the art historic points of view (e.g. Bourdieu, 1979; Moulin, 1986; , 1986; Foster and Blau, 1989; Blau, 1995).

The economic approach to museums may rely on *standard* or rational choice theory (neo-classical economics). Individuals are then taken to be completely rational and selfish, and the analysis focuses on market relationships assumed to function well. With respect to institutions, in the context of museums it is crucial to go beyond the market. *Political economy* (public choice) analyses the behaviour of governments and public administrations greatly affecting museums through their subsidies and taxes, but also through a web of regulations. But other types of

¹ A museum might have five different functions: to collect, to conserve, to study, to interpret and to exhibit (see Noble, 1970). At the end of the 80s, these five activities were condensed into three: Preservation, Research and Communication (see Weil, 1990a). Ginsburgh and Mairesse (Ginsburgh and Mairesse, 1997) look empirically at the mission statement of Belgian museums and propose an alternative definition of a museum.

economic theory may also be applied. In the context of museums, a particularly important variant is to take *psychological* aspects into account: individuals are not totally rational and are sometimes subject to anomalies, and they may to some extent be other-regarding and act in a pro-social way.

The Economics of Museums has been the topic of a few publications (e.g. Montias, 1973; Peacock and Godfrey, 1974; Feldstein, 1991; Bayart and Benghozi, 1993; Frey, 1994; Martin, 1994; Robbins, 1994; O'Hagan, 1995; 1998b; Johnson and Thomas, 1998; Schuster, 1998a; 1998b; Benhamou, 1998; Meier and Frey, 2002; Maddison and Foster, 2001; Weil, 2002). It has been treated in more general surveys (Throsby, 1994; Blaug, 2001), monographs and textbooks (see Frey and Pommerehne, 1989; Frey, 2000; Heilbrun and Gray, 2001; Benhamou, 2000) and readers (Blaug, 1976; Peacock and Rizzo, 1994; Ginsburgh and Menger, 1996; Towse, 1997) of the Economics of Culture. Early contributions are in German, Kindermann (1903), and in English, Robbins (1963; 1971), Baumol and Bowen (1966) and Peacock (1969).

This survey proceeds by looking first at the demand for museum services and then at its supply. Museum behaviour is then analysed from a neoclassical, and then from a more institutional, perspective. The following section is devoted to public policy issues connected with museums, and the last section discusses current trends in the museum world from an economic point of view.

2. Demand for Museums

There are two types of demand for museums. The first is the *private demand* exerted by the *visitors*. These may be persons interested in the exhibits as a leisure activity or as part of their profession as an art dealer or art historian. The visit may be undertaken by individual or family decisions, or may be part of an organised activity, e.g. schools or firms. The second type of demand comes from persons and organisations benefiting from a museum. This *social demand* is based on external effects and/or effects on economic activity.

2.1. *Private Demand*

By far the largest number of museum visits can be attributed to leisure time activity; the specialists play a quantitatively minor role and can therefore be neglected here.

The number of visits can be analysed by a traditional *demand function*, capturing the major factors determining the rate of visits per time period. Its characteristics can be determined by maximising individual utility functions subject to budget and time constraints. Its features can be empirically measured by using the data on museum visits and the factors included in the demand function, normally by a multiple regression analysis.

There are three major determinants relating to *prices* or *costs*:

- *Entrance fee*. Together with the number of visits, it determines the respective revenue gained.² The price elasticity indicates by how many percent the number of visitors decreases when the entrance fee is raised by a given percentage. Econometric estimates for a large number of different museums in different countries suggest that the demand for museum services is price inelastic. However, most studies are limited to case studies of one or two museums. Goudriaan (1985) found for four Dutch museums an average price elasticity of -0.1 to -0.2 . Darnell (1992) found for a particular museum in Great Britain a higher elasticity of -0.55 . Luksetich and Partridge (1997), using data from the *1989 Museum Survey*, estimate demand functions for different types of museums. Their estimated price elasticity range from -0.12 to -0.26 , depending on the type of museums. Zoos, science museums and natural history museums show the largest price sensitivity, probably due to stronger competition from other leisure pursuits. The elasticity for art museums is -0.17 . Overall, the low price elasticities suggest that museums can generate significant increases in revenues through increasing admission fees.
- *Opportunity cost of time*. It indicates what alternatives visitors have to forgo when they visit a museum. In order to measure the monetary value, one must identify how much additional income could have been gained during that period. For persons with high income, potential

² Apart from the question how sensitive the demand is to increases in the price, there is a large discussion about the effect of an entrance fee. For a general discussion about the question of charging, see O'Hagan (1995). Been et al. (2002) summarise the empirical research on the effect of free admission on attendance.

and variable time use, mostly the self-employed, the opportunity cost of time are higher than for people of low income and fixed working hours. The latter are therefore expected to visit museums more often, all other things being equal. The opportunity cost of a museum visit not only depends on the time actually spent in a museum, but also on how much time is required to get to the museum, i.e. the location, the parking facilities etc. For tourists, the opportunity costs of time tend to be lower than for local inhabitants, because they often visit a city with the purpose of visiting the respective museums. Econometric estimates find no clear pattern between income and attendance (Luksetich and Partridge, 1997). This is in line with Gapinski's (1986) findings for the lively arts. The increased opportunity costs of time for wealthy persons attending art performances offset the positive income effect. One has to separate the two effects to find a positive income and a negative opportunity cost effect on demand (see Withers, 1980 for estimations for the performing arts).

- *Price of alternative activities.* These are, most importantly, substitute leisure activities, such as other cultural events (theatre, cinema), sports, dining out in restaurant, time spent with friends at home etc. Even within the industry, museums may constitute a substitute for other museums. The higher the price of such alternatives is, the higher museum attendance is, *cet. par.* But complements also systematically influence the number of museum visits. Important are the costs incurred through travel, accommodation and meals. The higher the costs are, the lower is the rate of museum visits, *cet. par.* These complementary costs constitute a big share of the total costs of a visit: more than 80 percent (Bailey et al., 1998). Cross-elasticities have found to be empirically significant for the arts (see Gapinski, 1986; 1984 for estimations for the performing arts). Estimations of demand functions for museum services, which incorporate such variables, are still missing.

Income is another “classical” determinant of the demand for museum visits. Econometric estimates reveal an income elastic demand, i.e. increasing real disposable income favours museums (see e.g. Withers, 1980). Persons with higher income can better afford to cover the costs associated with museum visits. However, opportunity costs rise with income, as discussed above. Estimates of income effects are therefore often ambiguous. An important factor is also the high correlation between income and *education*. Better educated persons have the human capital necessary to more fully enjoy museums than people with lower education (for the influence of art lessons on museum visits, see Gray, 1998). This factor plays a larger role for museums of

(modern) art and history, but plays a lesser role for museums of science and technology, especially for museums of transport (railways, cars, or space travel).

There are many *other determinants* that must be included in a well-specified museum demand function.³ One is, of course, the quality of the collection or special exhibition mounted. Luksetich and Partridge (1997) estimate that the value of the collection increases attendance figures, especially for art museums. Or, as Oster and Goetzmann (2001: 9) state: “In fundamental terms, these results suggest that art matters.” Others are the attractiveness of the building, the level of amenities provided by a museum, i.e. the general atmosphere, the extent of congestion in front of the exhibits, the cafés and restaurants, and the museum shop. Important are also the marketing efforts made by a museum, especially through regular and attention-catching advertising.

A final determinant of the rate of museum visits is individual preferences. They are difficult to measure independently. Econometric studies of museum demand functions often indirectly capture them by introducing past visits as a determinant. In all empirical estimates, this factor proves to be highly significant and large: persons who used to visit a museum in the past are more likely to do so in the present and future.

2.2. *Social Demand*

Museums produce effects on people not actually visiting the museum. These benefits cannot be captured by the museums in terms of revenue.

2.2.1. **External Effects**

Museums create *social values*, for which they are not compensated in monetary terms. As a consequence, museums tend not to produce these values, or do so in too little quantity. Five types of such external effects may be conveniently distinguished:

- *Option value*. People value the possibility of enjoying the objects exhibited in a museum sometime in the future.

³ A lot of studies exist which analyse visitor surveys in museums in order to see who actually visits the museum (see e.g. Dickenson, 1997) and how much value a visitor gets from their visit to the museum (Ashworth and Johnson, 1996).

- *Existence value*. People benefit from knowing that a museum exists but do not visit it themselves now or in the future.
- *Bequest value*. People derive satisfaction from the knowledge that their descendants and other members of the community will in future be able to enjoy a museum if they choose to do so.
- *Prestige value*. People derive utility from knowing that a museum is cherished by persons living outside their community. They themselves need not actually like the museum, nor even visit it.
- *Education value*. People are aware that a museum contributes to their own or to other people's sense of culture and therefore value it.

This list of “*non-user benefits*” indicates that museums may indeed provide many social values for which they are not compensated by revenue. Museums may also produce negative external effects, whose costs are carried by other persons. An example would be the congestion and noise museum visitors inflict on a community.

The non-user benefits and cost have been empirically measured by using three different techniques:

- An obvious possibility is to conduct *representative surveys* of both visitors and non-visitors of a museum. The questionnaires have to be carefully designed in order to elicit the true willingness to pay for the various social values produced by a museum. In particular, the persons surveyed have to be confronted with trade-off questions making clear to them what other goods and services have to be given up in order to provide these non-user effects. Best suited are *Contingent Valuation Studies*, which were first developed to capture environmental values but have served well to capture cultural values (see, for example, Martin, 1994; the extensive empirical literature is surveyed in Noonan, 2002, and a critical discussion from a behavioural point of view, see Sunstein, 2002).
- Another technique relies on the *revealed behaviour* of individuals. The value of a museum for the non-visitors is captured by observing how they act. One well-developed procedure is to estimate how much property increases in value in a city containing a museum. The idea is that people are willing to pay more for a house or apartment situated in a location with a

museum, compared to an equivalent house or apartment in a location without such a museum. In order to isolate the induced increase in property values, many other influences on property prices have to be controlled for. This can be achieved by running carefully specified multiple regressions. The same “compensating variation” can be computed by analysing wages. Here the idea is that persons are willing to work for lower compensation in a location housing a museum. Again, the many other determinants of wages has to be controlled for in order to be able to isolate the monetary effect of having a museum. The compensating variation method has been used, for example, by Clark and Kahn (1988).

- A third technique to capture social values is to analyse the outcome of *popular referenda* on expenditures for museums. In Switzerland, with its many referenda, this approach has been successfully used to identify option, existence and bequest values of buying two paintings by Picasso for a museum (Frey and Pommerehne, 1989, chapter 10). For the performing arts, Schulze and Ursprung (2000) analyse a referendum in Switzerland on the amount of support for the opera house in Zurich. They could also detect external effects.

2.2.2. Effects on Markets

Museums produce *monetary values* for other economic actors. They create additional jobs and commercial revenue, particularly in the tourist and restaurant business. These expenditures create further expenditures (e.g. the restaurant owners spend more on food) and a multiplier effect results. *Impact studies* (see e.g. Seaman, 1997; 2002, and for two special exhibitons, Wall and Roberts, 1984) measuring the additional market effects created, are popular with politicians and administrators because they provide them with reasons to spend money on museums. However, these studies have to be interpreted with much care:

- Impact studies tend to focus on the wrong issue. The *raison d'être* of museums is to produce the unique service of providing a certain type of cultural experience to its visitors as well as providing the non-user benefits discussed above.
- A museum's task is *not* to stimulate the economy; there are generally much better means to achieve that goal. For example, a theme park or an exhibition of industrial machinery may be much better in stimulating the economy. If one follows the line of argument of impact

studies, one would have to give preference to whatever expenditure leads to more economic stimulation.

3. Supply of Museums

The production of museum services shows some particularities. In the following, we look at the cost structure, discuss how cost may vary with output and finally analyze the organisational form of most museums.

3.1. Cost Structure

Museums face a cost structure which differs from other firms in the service industry and can explain some of their particularities. Museums have (i) high fixed costs and low variable costs. This leads to a diminishing average cost curve. (ii) The marginal cost of a visitor is close to zero. Efficient pricing close to marginal cost therefore never covers the costs involved. (iii) The costs of museums have a dynamic component which is disadvantageous for the enterprises. Due to a productivity lag, museums, like most cultural organizations, face constantly increasing costs over time. (iv) Opportunity costs constitute a substantial part of the costs of a museum. The exhibits of a museum generate high opportunity costs, but are seldom taken into account by the museum. For data about the financial aspects of museums in the United States, see Rosett (1991).

(i) *High fixed costs.* Museums in general operate with considerable high fixed costs: buildings, collection, staff, insurance, technical outfits etc. cannot be varied in the short run. Independent of the output (e.g. numbers of visitors or numbers of exhibitions) the costs to running the museums remain the same. In the fixed costs, especially the costs for the acquisition of paintings increased when the art market prices exploded in the 80s and insurance fees for paintings rose accordingly⁴. High fixed costs have consequences for the structure of the museum organization and the pricing of the services they produce. Because variable costs, which vary with the output produced, constitute a relatively low fraction of the total costs, museums face decreasing unit costs.

⁴ Most art museums do not insure their paintings, except for art objects borrowed from other museums. Edvard Munch's "The Scream", for example, was not insured when it was stolen from the National Gallery in Oslo in 1994. In some countries, the government insures the museums or supports the museum in insuring their collection with government subsidies (Economist, 2001a).

(ii) *Marginal costs are close to zero.* To determine how much should be produced, marginal costs of a museum constitute crucial economic information. They indicate how costs vary with output.

The cost of an additional visitor is most of the time close to zero.⁵ If a museum sets up an exhibition, the basic operating costs are for opening the museum on that particular day. When more people enter the museum, the fixed component can be divided by an ever increasing quantity. Average costs therefore decrease. This decreasing average cost curve has consequences for the production of the museums service – depending on the demand curve. Were the demand by visitors sufficient, such an industry could earn monopoly profits as it constitutes a natural monopoly. But this would be inefficient as the price – which reflects the marginal utility to consumers – is above the marginal cost. But often demand is insufficient; the demand curve lies below the average cost curve and there is no price where costs would be covered.

However, there are situations where marginal costs are not zero. At so-called ‘blockbuster’ exhibitions, an additional visitor does impose costs on other visitors. Such congestion cost can be substantial and pricing according to the welfare rule possible. Maddison and Foster (2001) analyse the congestion costs at the British Museum using contingent valuation techniques. They estimate that the cost imposed by the marginal visitor is £8.05. However, most museums indeed face close to zero marginal costs.

(iii) *Dynamic cost:* It is argued that museums face the same economic dilemma as most cultural organisations.⁶ Museums are according to the cost disease theory, subject to a productivity lag producing constant financial problems for these organisations. For museums, no empirical study exists analysing this claim. However, one can think of possibilities of productivity advances in the museum industry: items can be shown on the internet, surveillance can be undertaken by cameras; organisational progress may rely on more volunteers, activities may be outsourced; or institutional settings may be changed, like introducing New Public Management for public museums or privatising them completely. All these changes work in the opposite direction of the potential ‘cost disease’.

⁵ Even if the output unit is the number of hours per year which the museum is open, or the number of days, this statement probably holds. The British Museum tries to cut costs by closing some sections, but they will not achieve a big cost cut – at least in the short run (see Economist, 2002; Art Newspaper, 2000).

⁶ For a detailed survey of Baumol’s Cost Disease, see Towse (1997). For a critique, see Cowen (1996) and Peacock (1993: 66-70).

(iv) *High opportunity costs.* Museums own, through their collected art works, a huge endowment of high value. The paintings bring not only storage and conservation costs, but also opportunity costs. The real costs of this capital stock would become apparent if museums borrowed money to buy the works of art. The annual interest, which the museum has to pay, constitutes the real costs of capital. The opportunity costs of a painting is its monetary value used in an alternative investment. The annual rate on return can be seen as the cost of the art work. Other opportunity costs are, e.g., for the building and its alternative uses. For most museums, the value of their holdings is by far their greatest asset.⁷ At least some museums have realised that a closed museum costs more than just the operating expenses of the building. There are alternative uses for the rooms of the museum. The museum can, for instance, lend rooms for business lunches or other social events. Although some museums start to engage in respective activities, endowment management is still underdeveloped.

Most museums do not put a value on their collection in their accounts. In Great Britain, this custom is even a condition of registration with the Museums and Galleries Commission (Bailey and Falconer, 1998: 173). Museums then understate their true capital costs (Grampp, 1989: 171) by not taking opportunity costs into account. This practice leads to an understatement of the losses and an overstatement of potential revenues. It induces the museum to become too large. Normally, a productive unit chooses its outcome level comparing costs and income. Without taking all costs into account, the museums grow too large. A firm in perfect competition would just close down or reduce its output in order to satisfy its owner. But museums do not face such a restriction. Normally, they are not in an ordinary competitive situation. Many museums even get more subsidies if they make losses. Neglecting opportunity costs can partly be explained by a rational reaction of the museum directorate to action from the political sector (they will be discussed in more depth in section 4).

3.2. *Cost functions*

It is important to know how in a museum costs vary with output and input. Are there economies of scale in museum operation, and how do various missions and activities of museums influence

⁷ In some cases, the opportunity cost of the land may be quite high, as museums are often situated in commercially attractive locations. See Rosett (1991) for more details.

the operating costs? One of the few museum cost functions was estimated by Jackson (1988).⁸ This study takes various activities of the museum into account and analyses their influence on costs. Attendance may be the most obvious output measurement one can come up with. His log-linear model can then be written as:

$$\ln TC = \ln a + b \ln Q + y \ln W + s \ln K + r_1 EX + r_2 ED + r_3 CN + r_4 MB + r_5 AC$$

where TC constitutes the total operating cost, Q is the total attendance figure, W is the wage rate as measured by ratio of wage payments to paid workers, and K is the cost of capital measured as the ratio of promotional expenditures such as development, membership, and advertising to contributions from all public and private sources. Because a museum can engage in various activities, the study looks at how priorities set by the museum influence costs. Therefore, EX are exhibition expenses as a fraction of total operating costs, ED are educational expenses, CN are conservation and preservation expenses, and MB are expenses for membership activities. Because quality plays an important role on costs in the performing arts (see Throsby, 1977; Globberman and Book, 1974), the study tries to capture quality by looking at which museum has accreditation by the American Association of Museums. This is, of course, only a rough, and maybe even a wrong, proxy for quality. AC is a dummy variable which equals 1 if accredited and 0 otherwise.

The results based on data from the Museum Program Survey 1979 for 326 U.S. museums found two interesting results: Firstly, museum operation appears to be characterised by economies of scale. Operational costs change more slowly than attendance figures do in small museums with up to 99'000 visitors a year. However, for bigger museums, diseconomies of scale are at work. Average cost curves for (art) museums are downward sloping with low attendance levels and rise after annual attendance exceeds 100'000. This result, however, does qualify the statement about museums being a decreasing cost industry. Secondly, an increase in expenses for membership activities as a fraction of total operating expenses decrease total costs. This may be due to the fact that a more active group of members can increase voluntary work and that cost of capital can be lowered because fundraising becomes easier.

⁸ For cost function for performing arts, see for example Lange et al. (1985).

More work is needed for us to fully understand the cost functions of museums. For a related branch of research on efficiency measurements in museums, see Mairesse and Vanden Eeckaut (2002) and the literature cited there.

3.3. *Firm structure*

Museums can take different organisational forms. Mainly, they can be private for-profit organisations, private non-profit organisations, and public organisations run in a non-profitable way. For Europe and for the United States, the non-profit organisational form is the predominant structure for museums. Different hypotheses can be put forward explaining the dominance of non-profit firms in the museum world and the arts in general.⁹ According to Weisbrod (1977), non-profit organisations were founded due to an unsatisfied demand for public goods. Alternatively, the cost structure of museums can explain part of establishing non-profit organisations.

Most museums face a demand curve lying below the average cost curve. This makes it impossible to set a price at which total admission receipts cover the total cost of the museum. If price discrimination is not applicable, or only of limited use, Hansmann (1981) argues that arts organisations can still ask individuals for voluntary price discrimination. Visitors volunteer to pay more than the official admission price and thus become donors. The nonprofit form dominates the for-profit enterprise in getting donations, because consumers lack exact information about the quality of the good and service provided. There is therefore no ordinary possibility of making a complete contract to protect donors from exploitation. Donors then prefer non-profit firms, where the possibility that the managers of the firm exploit donors and consumers is limited (for a similar argument, see Glaeser and Shleifer, 2001).

Looking at the historical development of municipality involvement in the support of museums, Smolensky (1986) argues that not the decreasing costs led to the nonprofit form of museums, but rather the educational externalities. In Europe, governments started to support museums due to these educational externalities, while in the United States ‘public provision was rejected as a socialist solution’ (Smolensky, 1986: 768). The nonprofit form is a hybrid, which was established

⁹ For a selection of articles dealing with nonprofit firms in the arts, see DiMaggio (1986). For a general survey about non-profit firms and altruistic behaviour, see Rose-Ackerman (1996).

thereafter, and is not only applied to museums but to performing arts organisations, universities, libraries and hospitals.

4. Museum Behaviour

The final output a museum produces is not given but can be chosen by the art organisation – as can the input and the technology used. As resources are scarce, museums have to make decisions where the emphasis should be. Should they produce a lot of exhibitions, and thereby increase the number of visitors, or should they put more emphasis on raising additional income in restaurants or shops? Firstly, two theoretical approaches for the behaviour of museums are presented. In a second part, three major activities of museums (management of the collection, pricing policy and commercial activities) are analyzed using the theoretical models.

The behaviour of a museum or its managers respectively can be modeled in two different ways: (1) the neoclassical approach, which assumes rational actors maximising utility of a museum in a benevolent way; and (2) an institutional approach, which goes beyond the market and emphasises the importance of institutional settings (e.g. the dependence on public support) for the behaviour of the museum management. We will present the first approach briefly and apply the second approach in more depth.

4.1. Neoclassical approach

4.1.1. A Model

Throsby (1994) presents a model of the behaviour of performing arts firms which can be applied to museums. The model assumes that there is no separation between owner and control of the firm. The directorate of the museum maximises the firm's utility function. Assuming that a museum's objective is nonprofit, the budget constraint requires a zero net revenue. The non-profit structure of the museum raises the question what the museum manager maximises instead. It can be proposed – and this constitutes the crucial assumption – that the museum's utility is related to the number of visitors to the museum (y) and the quality of the exhibitions (q). This assumes that the quality of the museum service can be measured. Then the decision by the museum management is to maximise

$$U = U(y, q)$$

subject to

$$p(y)y + g(q) + h(y) - c(y, q) = 0.$$

The museum makes revenues from the entrance fees (p), which is a function of the number of visitors (y); the level of donations and government grants (g), which depend exclusively on the quality of the museum; and the revenue from ancillary goods from the shop and the restaurant or café (h), which depends on the number of visitors. Costs depend on both output and quality.

The first-order conditions can be written as:

$$\begin{aligned} U_y / \lambda + p_y y + p(y) + h_y &= c_y \\ U_q / \lambda + g_q &= c_q \\ p(y)y + g(q) + h(y) &= c(y, q) \end{aligned}$$

The subscripts indicate partial derivatives and λ is the multiplier on the constraint.

Two insights can be gained by looking at the optimality condition: Firstly, directors of a non-profit museum get extra utility from an increased number of visitors. They therefore set the entrance fee such that marginal revenue from entrance fees and ancillary goods are less than marginal costs. This result from the first optimality condition could explain why museums set too low a price according to the revenue maximising condition (e.g. Luksetich and Partridge, 1997). Secondly, museums engage in increased quality beyond the point where marginal grant income is equal to the marginal cost of increasing the quality by one unit. This behaviour is due to the extra utility the museum gets from an increase in quality. According to the model, museums tend to provide too high quality at too low a price compared to revenue maximising firm.

The objectives of the museum, quality of the exhibition and number of visitors are the crucial assumption in the above model. Hansmann (1981) analyses the extreme cases of a museum interested only in quality, visitor flows or budget. For example, the quality maximising firm sacrifices visitor numbers too much for the sake of quality. But Hansmann (1981) also mentions the importance of different forms of public grants. While lump-sum subsidies would lead to an increase in quality for the quality maximiser, the increase in visitor numbers is less certain. It only takes place if firstly, the increase of the visitor flows does not increase the cost of quality and secondly, the new marginal visitor has an unusually marked taste for quality. Different

behaviour will be shown if the museum is supported by matching grants for the donations it receives. In this model, a subsidy will not only increase donations but will give incentives for the museum to adjust quality and price (and therefore visitor flows) to a level which comes closer to maximising consumer welfare.¹⁰

4.1.2. Critique

The model presented above assumes that managers of museums behave in a benevolent way and are driven only by a cultural aspiration favourable to the owner of the museum (e.g. the public, private donors and/or a foundation). However, this model may be criticised in two respects: (1) Managers of museums and chief curators may behave in a more selfish way than assumed by the model. To focus on the explicit behaviour of managers of museums is therefore necessary. (2) Museum managers are primarily interested in their reference group and will try to maximise their respective reputations. In the absence of the right incentives, they will not produce at a level (in respect to quality and quantity) which maximises firm's or consumers' utility.

4.2. *Institutional Approach*

Instead of taking for granted that managers of museums behave totally in the interests of the museums in the following model the directorate is concerned primarily with the personal utility of its members. The directors' utility depends on their own income and the prestige they get within their reference group, which consists mainly of art lovers and the international museum community. A second source of amenity is derived from the agreeable working conditions and job security. But the museum directorate is not free to simply pursue its own goals, because they face certain constraints on their actions. Differences in these institutionally determined restrictions explain the museum management's behaviour.

The finances available are the most important constraint on the museum's directorate. Other constraints, such as limited space or legal and administrative burdens imposed by the bureaucracy

¹⁰ Many studies show that grants which match donations (matching grants like the one by the National Endowment of the Arts or also the deductibility of donations from income tax) increase willingness to donate. See for example, List and Lucking-Reiley (2002) and Ribar and Wilhelm (2002).

or labour unions, can also weigh heavily. The source of income differs considerably between museums. While some depend mostly on public grants, others rely exclusively on private money (donations and sponsorship, or income generated from entrance fees, shops and restaurants).¹¹ From a politico-economic point of view, the institutional set up and the nature of funding of the museums has a dramatic influence on the behaviour of the directorate. We here distinguish three types of museums: public, private and museums dependent on donations. The incentives for the museum's directorate to behave in a certain way vary enormously, depending on this institutional framework (see Frey and Pommerehne, 1989; Rosett, 1991; Meier and Frey, 2002; see also the theory of nonprofit organisation in Weisbrod, 1998; James, 1983; Schiff and Weisbrod, 1991; and for a principal-agent model, Prieto Rodriguez and Fernandez Blanco, 2002). Museum directors, according to that theory, do not want to produce ancillary goods, which solely generate revenue for the core activity. Institutional factors then influence the incentives to be engaged in a certain activity.

Most museums, however, are somewhere between the polar cases of purely public and purely private museums (see Schuster, 1998a; van Hemel and van der Wielen, 1997; Meier and Frey, 2002). In the last couple of years, more public museums moved in the direction of private museums because state support decreased, especially in Europe (NEA 2000). The government, as a consequence, gave the directors more independence. Both the discretionary room and the pressure to generate more income of their own increased. Nevertheless, the institutional setting remains crucial for the behaviour of the museum directorate. The fact that (public) museums may be seen to strongly change their behaviour when receiving more independence underlines the power of institutional factors.

Public Museums

Directors of purely *public museums* rely exclusively on public grants. The government allocates them sufficient funds to cover the expenses considered necessary for fulfilling their tasks. While they are expected to keep within the budget, if a deficit occurs, it will be covered by the public purse. This institutional setting provides little incentive to generate additional income and to keep

¹¹ Rosett (1991) presents evidence on the financing of U.S. museums, which supports the picture of the heterogeneous funding of museums.

costs at a minimum. The directorate will not allocate energy and resources generating additional income, because any additional money goes back into the national treasury. If they were to make a surplus, the public grants would correspondingly decrease, which acts like an implicit tax of 100 percent on profits. The museum's management tends to emphasise non-commercial aspects. When the directorate is not forced to cover costs using its own efforts, it can legitimise its activities by referring to intrinsic 'artistic', 'scientific', or 'historical' values. This application of non-commercial standards helps the museum directors to achieve their goal of prestige, top performance and pleasant working conditions. Even if museum income does not automatically go back to the public purse, Maddison (2002: 1) shows that "(s)tatistically analyzing data drawn from a panel of UK museums, evidence is found that increases in non-grant incomes do indeed result in a statistically significant reduction in future government subsidies." From this institutional point of view, one would therefore expect that:

- Public museums do not sell any paintings from their art collection because firstly, the directorate cannot use the income generated and secondly, activities are then measurable in monetary units, which leaves them open to criticism from outside (be it by politicians or by public administrators) (Frey, 1994; Montias, 1973).
- Directors of public museums are little interested in the number of visitors, because they are not dependent on income from entrance fees or shops. Therefore, exhibitions are designed to please an insider group of art 'freaks'.
- As a consequence, visitors' amenities in public museums are poorly developed. Little attention is paid to the profitability of museum shops, restaurants and cafeterias.

Private Museums

Directors of purely *private museums*, on the other hand, have a strong incentive to increase their income, because their survival depends on sources of money like entrance fees, the restaurant, shop surpluses and additional money from sponsors and donors. If private museums generate a surplus, they are able to use it for future undertakings. As a result, it is to be expected that:

- Private museums rely on the market when managing their collection. Museums actively sell paintings that no longer fit into the collection and use the money for buying new works of art.
- Private museums are more concerned with attracting visitors. ‘Blockbuster’ exhibitions guarantee that the museum will earn revenue, because the preferences of a larger group of people are taken into account. Hence, the exhibitions are better arranged from a didactic point of view, appealingly presented and, above all, the works of art are shown in a context which is attractive to a large crowd.
- Private museums emphasise the visitors’ amenities. The museum directorate is concerned with the well-being of the museum’s visitors and tries to satisfy the preferences of the visitors at the lowest possible cost.

Museum dependent on donations

Contributions to non-profit museums may be deductible under the income tax rule for individuals and corporations in certain countries.¹² When the marginal tax rate falls, the price for donations decreases, which reduces the willingness to donate. The tax-deductible status, if chosen by the museum, affects behaviour fundamentally. There is every incentive to avoid profits by charging low or ‘social’ prices (which strengthens the legitimacy of tax-deductible status), while there is also an incentive to take out profits in the form of various kinds of excess payments that show up as costs.

Museum directors who depend on donations have an incentive to attract donors. People devote much effort and skilled resources to this end. Donors can be pleased in various ways, which influences the behaviour of the museum management. Donors can exercise some measure of control over the activities of museums, as discussed in Glaeser (Glaeser, 2001: 39) and Oster and Goetzmann (2001). Museums dependent on donations therefore can be expected to behave in the following way:

¹² For an overview of the legal possibilities of deducting donations to the arts from taxes, see Schuster (1985; 1986).

- Donors directly influence museum policy in two ways: they can either interfere in the programming or they can set heavy legally binding limitations on the collections they donate. The limitations on the collections can have great impact on their management. Most donors want to highlight their own artistic visions. The curators normally win the battle over the display of the paintings, donors strongly restrict – and mostly prevent – the marketing of the donated paintings. Museums dependent on donations are rarely able to manage their collections on the market, which imposes considerable opportunity costs on museums. As the donations are partly financed by the government via their tax expenditures, the costs imposed by the donors on the museums are indeed a problem of supporting museums through tax deductions.

Donors can be pleased when museums publicise the donor's contribution, thus enhancing their prestige (Glazer and Konrad, 1996; Harbaugh, 1998). Museums have developed an elaborated system of honours ranging from appropriate attributes ('benefactor', 'patron', 'contributor', etc.), to naming rooms, wings and even whole buildings after the donor.

- Museums must give the impression that the donations are well used. Donors want to have the feeling that they contribute to a worthwhile cause. A good reputation of the art institution with the public and the media is crucial for the flow of donations. This forces the museum directorate to use their money efficiently. But there are no contracts completely controlling the directors. Donors therefore prefer to deal with non-profit firms acting under a 'non-redistribution constraint' (i.e. prohibiting the personal appropriation of profits). Removing the profit goal avoids the problem that managers cheat on the donors to some extent (Hansmann, 1981).

4.3. *Museum behaviour in three important areas*

Collecting Management

In most art museums of the world, a considerable part of the holdings of paintings is not exhibited and not accessible, with the possible exception of specialists. What constitutes the major part of the wealth of an institution, such as an art museum, does not appear in the balance sheet; the bookkeeping procedure of art museums does not even mention that the paintings

collected are of any value, although at today's art market prices, collections of even minor museums are likely to be worth dozens of millions of Euro, and in the case of major museums many hundreds of millions of Euro.¹³

The failure to consider opportunity costs throws up the question why such behaviour should take place. The museum managers know, of course, that their holdings are very valuable, and they cannot be assumed to be irrational. But why do rational, well-informed people systematically not account for these large sums of money? Three reasons can be proposed which may explain the behaviour of the museum management:

(1) One reason may be that government imposes a *legal constraint* on selling. Many, or even most, public museums in continental Europe are prohibited from de-accessioning. It is often allowed in the United States and to a lesser extent also in Britain (Grampp, 1996). But as O'Hagan (1998a: 171) argues: "The real opposition arises from the museum personnel and not from the law." Even in the United States, where it is legal to sell paintings, the curators argue that it is not ethically right to do so, unless one improves the collections. However, museum directors should be allowed to be more flexible in using the money of de-accessioned paintings, e.g. for operation expenses, as is argued, for instance, by Temin (1991).¹⁴

(2) A quite different matter is the voluntary contracts between the museum directorate and donors, who often want to keep the collection they give intact and often require it to be put into particular rooms. The directorate is faced with a trade-off between receiving additional paintings and having to accept certain restrictions (Thompson, 1986; Weil, 1990b). If it decides to accept the gift, its value must be higher than the cost of the restrictions involved, i.e. the museum people's evaluation of having the paintings exceeds their opportunity cost. But nowadays few museums accept such restrictions attached to a donation (Weil, 1990b).

¹³ Most museums hold a large part of their paintings in storage rooms – up to 80 percent of the collection. See e.g. Barry Lord et al. (1989).

¹⁴ For a discussion on the legal aspects of de-accessioning art, see White (1996).

(3) The most convincing explanation for the behaviour observed has to do with institutional differences. For public museums, the museum directorate has *no incentive* to sell its holdings in storage.¹⁵ Private American art museums are indeed active in selling and buying art in order to suit their purposes. In the period of 1988-89, 88 museums sold 1284 lots worth \$ 29,6 million, and 93 museums bought 142 lots worth \$ 37,5 million (Cantor, 1991: 21). The director of the Getty Museum states that "this practice... (is) the key to shaping the collections by the staffs of many major big city museums with large collections, and others too" (Feldstein, 1991: 26). The name of the donor is then attached to the painting which reduces donor's resistance against de-accessioning. For public museums, it is rational not to engage in selling paintings for two major reasons (Frey, 1994):

- (a) When a painting is sold, the revenue gained is not added to the museum's disposable income but, according to the rules of the public administration in most countries, goes into the general public treasury. Even if this is not the case, the budget allocated to the museum is most likely to be correspondingly reduced. This institutional setting kills all incentives to manage the collection on the market.
- (b) Selling paintings means that the existing stock of art is at least partly monetized, which eases outside interference by politicians and parliamentarians with the museum's business (O'Hare and Feld, 1975). The museum directorate's "performance" becomes easier to evaluate and the buying and selling prices of particular paintings can be compared. As long as the criteria for evaluation are exclusively of an art historic nature, the museum community is to a substantial extent able to define its performance itself. This is a useful and successful survival strategy that museum administrations do not voluntarily give up.

¹⁵ Pommerehne and Feld (1997) also find differences in buying paintings by public and private institutions. Thus, public museums pay, *ceteris paribus*, more in art auctions than private investors.

Lending policy is a different but related phenomena. There is a norm not to exchange works of art using the price mechanism (Caves, 2000: 345-347).¹⁶ Even private museums follow this rule, although there are many advantages to having a market instead of relying on barter (see for an overview Heilbrun and Gray, 2001: 202-209).

Pricing

There are large differences between museums in the way they set the entrance fees. There is an extensive discussion whether to charge or not to charge (for an overview e.g. see O'Hagan, 1995; Heilbrun and Gray, 2001; Bailey and Falconer, 1998). This discussion probably goes back to Mr. Sloane, whose donation led to the founding of the British Museum, but with the explicit restriction not to charge an entrance fee. Still today, most British museums don't charge their visitors. But even in the United States there are some museums, at least the national ones, which do not levy an explicit entrance fee. Two main arguments are put forward in favour of free admission. (1) There are some positive externalities connected with a museum, as discussed above. Therefore the museum should be paid with tax money. But the benefits are not distributed equally and an accurate taxation according to these benefits is almost impossible. Those who visit a museum probably benefit the most from the museum. Therefore, an entrance fee should be levied over and above the contribution from general taxation. There does not seem to be any evidence that this measure hits low-income groups disproportionately (O'Hagan, 1998a: 178). In the system where there are no charges, it is not only the majority who pays, but also the poor income group who benefits the least. (2) The low or zero marginal cost of a visitor lead to the view that to charge a zero price is efficient. As mentioned above, the assumption of zero marginal costs can be criticised for various reasons. However, it is possible to avoid some of the problems by adopting a pricing option which deviates from one of the two extremes.

There are a variety of pricing options besides free entrances: donation boxes with and without price suggestions, seasonal tickets with zero marginal pricing¹⁷, a free day policy or a more

¹⁶ An exception are Russian museums. Western museums are prepared to waive their rule of not paying money for lending works of art because they acknowledge that Russian museums are extremely short of cash. Revenues are one of the only possibilities of financing necessary expenditures in order to maintain their museums and collections.

¹⁷ A museums pass allows 'free' entrance into every museum in a given city or region. This is implemented in many European and American cities and regions. Ginsburgh and Zang (forthcoming; Ginsburgh and Zang, 2002) focus in

sophisticated price discrimination. The price discrimination, which is supported by economists (e.g. Frey, 1994), can be undertaken in times of high demand and/or with respect to the type of visitor. A lot of museums, even those who do not charge for their permanent collection, have higher entrance fees for special exhibitions. Additionally, the museum could charge more at weekends and less during summer holidays. Tourists could be charge more than residents, which makes sense from an economic and political point of view. Prices can also be differentiated between visitors who want to spend little time on the visit to a museum and those who want to spend ample time. In periods of high demand, when the art museum's capacity is fully used, two entry fees can be set, a high and a low one. The high priced entry will have a correspondingly shorter queue and will be used by the first category of visitors. The low price entry option will be used by the second category of visitors, among them students and other young people who don't want to spend much money, but have plenty of time at their disposal.¹⁸ Price differentiation is advantageous for both categories of visitors (one gets in more quickly, the other pays less) as well as for the museum administration, which can therefore raise its revenue.

The question of how pricing influences the finances of the museum not only depends on the price elasticity of demand. Charging can also influence the flow of public subsidies and donations. Moreover, pricing decisions can influence the income generated with ancillary goods, like revenue from the shop and restaurant depends on the number of visitors.

In some cases, the government enforces a target which the museum directors have to comply with. Two such targets may be a given number of visitors and a given amount of revenue. Darnell (1998) analyses the effect of such targets on admission fees for the museum. In the case of inelastic demand curves, the museum may face the problem that there is no price which attracts enough visitors and brings in enough revenues at the same time. Darnell (1998) discusses the possibility of shifting the demand curve (e.g. by advertising more or improving the quality of the visitors experience) to make the two targets mutually compatible. This depends crucially on the extent of the shift in demand induced and its costs. However, the model does not incorporate the possibility of raising revenue from sponsors, donations or ancillary goods. Most museum

their analysis on how the revenue of such a pass can be distributed to the participant museums. Based on theoretical arguments drawn from game theory, they proposed distribution using the Shapley value.

¹⁸ Oberholzer-Gee (2002) presents evidence on a field experiment where money is offered in order to be able to jump the queue. While a majority is willing to jump the queue, only a minority accepts the money.

directors would, in such a case, increase the resources devoted to these activities. Additionally, if the targets are given by the local government or the governing body of the museum, bargaining would probably take place, resulting in an adjustment of the targets.

The complementarities between admission fees and sales in museum stores and cafeterias affect optimal pricing strategy.¹⁹ The empirical result in Steiner (1997) does not suggest that an additional free day maximises revenue, because the cost of the free day in decreased admission revenues is not compensated by more sales in shops and restaurants.

Commercial activities

Besides the core activities of museums, which are directly related to the works exhibited or stored, and for which some of them charge an entrance fee, most museums also engage in ancillary activities. The revenues from these activities can make a large contribution to cover the operation expenses (for instance, see Heilbrun and Gray, 2001: 211; Anheier and Toepler, 1998). Museums operate museum shops, restaurants and cafés, sell catalogues, make money from parking lots, organise cultural trips, etc.²⁰ While the first museum shop was established by the Metropolitan Museum of Art in New York in 1908 (Weisbrod, 1988: 109), it was at that time more the exception than the rule. Today, a lot of American museums not only operate their own shops but even run off-site stores in the city the museum is located in, or even in a totally different city, as does the Metropolitan Museum of Art.

It is an interesting question, exactly which museums engage in ancillary activities. Is the museum world increasingly commercialised? Directors of museums do not necessarily want to produce ancillary goods as such; often they only serve to generate revenue for the core activity. But institutional factors may force museum directors to engage in such activities (see the data in Frey and Pommerehne, 1989). Weisbrod (1998: 58) cites the example of the British Museum where, in

¹⁹ For a general theoretical discussion of the interdependence between entrance fees and ancillary goods, see Marburger (1997).

²⁰ Many books offer advice about how to maximize profit from specific services. The most elaborate – because oldest – such branch concerns the management of museum store. See for example, Theobald (2000).

1996, the government announced it would reduce its subsidies. Suddenly, the museum started to discuss new possibilities of raising revenues.²¹

The empirical evidence, however, on commercialisation is ambiguous: Heilbrun and Gray (2001: 210) state that “Earned income accounted for only 16.1 percent of the total in 1993 but rose to 25.9 percent in 1997.” In contrast, Anheier and Toepler (1998: 240) conclude from their more in-depth study that “Our data suggest that art museums have not become significantly more commercial in recent years.” Segal and Weisbrod (1998) find for the arts industry that donations and commercial activities are negatively correlated. Because their causality test did not show any significant effects, one can conclude that a decrease in donations (or public grants) increases ancillary activities. Much more research is needed to gain more definite knowledge.

Does the commercialisation of museums lead to a replacement of directors? Do museums increasingly hire directors with a background in the private business sector? While this selection would reflect the shift in the orientation of museums, it might also start a dynamic process due to the change in the museum world. Anecdotal evidence shows, that at least in Europe more and more arts organisations demand that their directors have managerial experience.²² This trend is especially marked in the so-called superstar museums to be discussed in the next section.

5. Current Trends in the Museum World

Two developments relating to museums are worthy of special attention: superstar museums and special exhibitions.²³

5.1. *Superstar Museums*

There are a few well-known and world-famous museums. They can be called "superstar museums" because they have a special status setting them far apart from other museums.

²¹ For the case of the British Museum and general problems of extended management discourse within museums, see Zan (2000).

²² See also Economist (2001b).

²³ This section follows closely Frey (Frey, 1998; Frey and Busenhardt, 1996).

Superstar museums are characterised by five aspects:

- Superstar museums are a "*must*" for tourists. Such museums are featured prominently in guide books. Superstar museums have achieved a cult status almost everyone is aware of. There are not many tourists who, for example, go to Leningrad without visiting the Hermitage, or to Rome without visiting the Vatican Museums, or to Florence without visiting the Uffizi, or to Madrid without visiting the Prado, or to London without visiting the National Gallery, or to Vienna without visiting the Kunsthistorische Museum, or to Amsterdam without visiting the Rijksmuseum, or to Paris without visiting the Louvre. The same holds for the United States; there are certainly very few tourists who would not visit the Metropolitan Museum of Art and/or the Museum of Modern Art when in New York, the National Gallery of Art when in Washington, or the Art Institute when in Chicago.

- Superstar museums have *large numbers of visitors*. These museums have experienced a dramatic increase in the number of visitors. In 1998, for example, the Louvre increased its number of visitors by 11 percent. French museums with more than 100,000 visitors increased their number of visitors by 5 percent. In contrast, smaller museums experienced a decrease of 3 percent in the same period.

- Superstar museums feature *world-famous painters and world-famous paintings*. Rosen (1981) originally developed the superstar idea for persons, emphasising that the differences in income far exceed the differences in talent and performance. This also applies in the case of artists and painters. The great disparity among artists is a striking feature of all the studies on their income distribution (see e.g. Filer, 1986 or chapter 9 in Frey and Pommerehne, 1989). The collections in large museums comprise works by thousands of artists; only a few of them are known to art lovers, let alone to the average visitor. Museums wanting to attract a large crowd have to concentrate on a few renowned artists. Some paintings are virtually known to everyone in the western world (and far beyond) but the number is rather small. Examples are the (so-called) "Nightwatch" in Amsterdam's Rijksmuseum, or "Las Meninas" in the Prado. The quintessential superstar painting is Leonardo's "Mona Lisa". The Louvre has responded by indicating a direct way to the Mona Lisa right at the entrance. Even the Vatican Museum now posts the (more or less) direct way to another world famous work of art, Michelangelo's frescos in the Sistine Chapel.

From the visitors' point of view, even very large museums are closely associated with, or defined by, very few (often one or two) paintings - the superstar phenomenon. Museums are not only the proud owners of these masterpieces, but at the same time their captives. They are forced to exhibit them, but this also means that, in comparison, their other paintings lose prominence. There may be a slight spillover of interest to less renowned pieces in the collection. The main effect is, however, to draw attention away from the rest of the collection.

- Superstar museums often have an *architectural design* making the building itself a world-famous artistic feature. Examples are Frank Lloyd Wright's Guggenheim Museum in New York; the Centre Pompidou in Paris; Mario Botta's San Francisco Museum of Modern Art; Frank Gehry's Guggenheim Museum in Bilbao, and Richard Meier's Getty Center in Los Angeles.
- Superstar museums are *commercialised* in two respects: A significant part of their income derives from the revenue of the museum bookshops and museum restaurants. Superstar museums have a major impact on the local economy.²⁴

Superstar museums differ with respect to the importance of these five characteristics. Ideally, they must fully meet all of them; the Musée du Louvre is an example, the architectural feature being Ming Pei's pyramid at the entrance. Other superstar museums are very strong with respect to some characteristics, while barely meeting other characteristics. Examples would be the Getty Museum in Los Angeles, which excels with respect to the architecture (including its location) but does not have as many world famous artists and paintings as other superstar museums. Another example is Amsterdam's Rijksmuseum, which is not particularly noted for its architecture - at least compared to, say, the Louvre.

Some art museums have reached the status of superstars and have become household names to hundreds of millions of people. Only a few museums attain this rank; they are mostly associated with major tourist cities, which in turn owe part of their prominence to the superstar museums.

²⁴ In the case of the Guggenheim Museum in Bilbao, a discussion emerged as to how much this superstar changed the economy. While Plaza (2001) shows that the number of visitors to the Basque region increased dramatically due to the Guggenheim Museum, Gómez (1998; 2001) emphasises that one should be more cautious in analysing the effect on urban regeneration, because it is still too early to assess the economic impact of the museum in the city. For a broader discussion of 'museum cultural districts', see Santagata (2002).

Superstar museums are able to exploit the economies of scale by reaching out to a large number of people. These museums are not only featured in newspapers, on the radio and TV, but can raise enough money to produce their own videos and virtual museums. These costs are essentially independent of the number of consumers and therefore favour the major museums, because the set-up costs are normally too large for smaller institutions. While the latter will certainly catch up (a homepage will soon be a matter of course for all museums), the major museums will have the funds to improve their scope and quality so as to maintain their lead. Superstar museums have started to reach out by establishing museum networks. Thus, for example, the London Tate Gallery has spawned satellite museums at Liverpool and St. Ives and the Prado has started to lend out about one third of its holdings to museums in the provinces.

Superstar museums find themselves in a new competitive situation. Their reference point shifts from other museums in the city or region to *other* superstar museums. This competition between the superstars extends over a broad area, including commercial activities and sponsors.

The superstar museums must make a huge effort to stay in that category. Frantic activities are therefore often undertaken: special exhibitions are organised in the hope that they turn out to be blockbusters, visitors' amenities are improved (e.g. a larger variety of fancy restaurants) and new buildings with stunning architectural designs are added (e.g. in the case of New York's Museum of Modern Art). The superstar status tends to transform museums into providers of "*total experience*". This new role stands in stark contrast to the traditional notion of museums as preservers of the past.

The "total experience" offered by the superstar museums, and demanded by the huge crowds of visitors, must meet two conditions:

- Art must be placed in the context of history, technology and well-known events in politics and entertainment, such as motion pictures. Superstar museums are forced constantly to be "special", i.e. to also embed the permanent collection in a context attractive to large numbers of visitors.
- Superstar museums must be able to provide everything, not unlike entertainment parks. The activities offered extend beyond cafés, restaurants and museum shops. Many superstar museums have already gone far in this direction. The Louvre, for example, opened a commercial precinct called "Le Carrousel du Louvre", a large underground shopping mall. Activities of superstar

museums comprise all sorts of educational activities (not only for children but also adults), and most importantly, plain entertainment.

5.2. *Special Exhibitions*

There is hardly an art museum not running, or at least preparing, a special exhibition of some sort. Such an exhibition may feature one particular artist (often in commemoration of his or her birth or death), or a group of artists, may focus on a period or a genre of paintings, or may establish a connection to some historical event (see Belcher, 1991: 49). Some special exhibitions are composed solely of paintings from the holdings of the organising museum, but most such special shows bring together works of art from different museums and private collections. Once put together, large temporary exhibitions frequently travel to other museums cooperating with the organiser. Some exhibitions indeed are already designed to be sent to various countries. Not rarely, important museums simultaneously display several shows which they have either mounted themselves or taken over from other organisers.

The boom in special exhibitions poses a challenge to art economists because of the glaring contrast to the financial depression in which many museums find themselves. Even in some of the world's leading museums, some wings are temporarily closed, and opening hours are reduced in order to save money. Curators are concerned that they have less and less money available for the restoration and conservation of their collection.

On the *demand side*, special exhibitions have some special features worth noting.

- *High Income Effect*. Consumers tend to spend an increasing amount of rising income on visiting specially arranged art exhibitions. Scattered empirical evidence exists showing that econometrically estimated income elasticities of demand are larger than one. Special exhibitions thus find themselves in the comfortable position of being in a growing market.

- *Attracting New Visitor Groups*. As has been well documented in cultural sociology (e.g. Klein, 1990), a large percentage of the population rarely, if ever, visits museums (except museums of technology and transport). This applies, in particular, to population groups with low education, which are also short of cultural tradition (see Blau, 1989; DiMaggio and Useem, 1989). The situation is clearly different for special cultural events, which are widely advertised, and which

are made attractive to new groups. As special exhibitions normally take place in museum premises, they still face the difficulty of attracting new groups. This is partly overcome by 'dressing-up the museum' (see also Elsen, 1986): special exhibitions are without exception marked by huge banners and other advertising gags, and even the museum entrances (which to non-museum goers otherwise can look menacing) are virtually opened up and made welcoming. The 'Emperor's Warriors' Exhibition in Edinburgh 1985 is such an example of opening up the museum. Extensive promotion also plays a role. Coutts (1986) relates in his article 'Profile of a Blockbuster' the success story of that exhibition. It attracted over 200,000 visitors; when questioned, a considerable number (15%) reported that they normally do not visit museums.

- *Focusing Attention*. An exhibition seeks to attract consumers by presenting some extraordinary cultural experience. They specialise on some particular artist (e.g. on Rembrandt or van Gogh), some period (e.g. Renaissance paintings), some topic (e.g. courtly paintings), some genre (e.g. mannerist paintings), or some type of presentation (e.g. portraits). As a result, the visitors interested in such particular forms of art come together, often from far away locations. Special exhibitions, in particular the 'blockbusters', may even be compared with major sports events such as the Olympic games or world championships. Public attention is drawn away from regular activities towards a special and unique (or at least rare) event.

- *Newsworthiness*. Special exhibitions are *news*, and attract the attention of television, radio and the print media, which is otherwise impossible to get to the same degree, and especially free of charge. It is easy to get media people to report on a special exhibition, while the permanent collection is hardly newsworthy (see e.g. Bayart and Benghozi, 1993: 210). Large exhibitions devoted to mythical artists such as Rembrandt, Van Gogh or Picasso, mobilise the press and thrust the organising museum people into the limelight (see also Elsen, 1986: 20).

- *Low Cost to Visitors*. Special exhibitions are closely linked with tourism (see e.g. Getz, 1989; O'Hagan, 1992: 65). A considerable number of visitors come from out of town, from another region, and often from a foreign country. The combination of a cultural event with tourism lowers the individual's cost of attending in various ways. In the case of the increasingly popular package tours, the consumers only have to take the initial decision and all the rest is taken care of by the travel agent. In the case of culture, where it is often burdensome to acquire the tickets from outside, the reduction of decision and transaction costs are substantial.

- *Low Price Elasticity of Demand.* The strong attraction of special exhibitions to tourists also affects the price elasticity of demand. Tourists relate the entry fee to their expenditures for the overall trip. A given price increase is then in comparison perceived to be relatively small and does not have much impact on demand (for the general argument see Thaler, 1980 for museum admission fees see Blattberg and Broderick, 1991). This effect is supported by empirical evidence. Attendance figures at the Museum of the Palazzo Ducale in Venice, for example, have been fairly stable, although admission fees for the exhibitions presented in the last years have increased by more than 10 percent on average. In fact, the number of visitors to the Palazzo Ducale seem to be in direct proportion to the number of people visiting the centre of Venice (ICARE, 1994).

- *High Demand by Business.* Special exhibitions offer many opportunities to make money. Indeed, there is a large literature documenting the monetary profitability of such cultural events (e.g. Feldstein, 1991; Fronville, 1985; DiMaggio, 1985). They do not only extend to the tourist industry but also to firms catering for the production of the festivals and exhibitions. There is also a benefit to book publishers in the case of special exhibitions. They profit from the interest raised by glamorous cultural events.

There are also various special determinants on the *supply side* of special exhibitions which contribute to their boom.

- *Low Production Cost.* The absolute cost of many special exhibitions is certainly high, but it is low *compared* to the sum they would require if all the resource inputs used were attributed to them. Important resources are taken from the permanent venues and only additional costs are covered by the special artistic events. Museum employees are used to organise and run special exhibitions, but the corresponding cost is not attributed to the special events (Montebello, 1981). Some cost factors, though substantial, often only appear in disguised and long-term form. One such cost is the neglect of cataloguing and maintaining the permanent collection (see Börsch-Supan, 1993 for several pertinent examples). But also the museum rooms, where the special exhibitions take place, do not enter the costs accounted for as the opportunities forgone are not part of the book-keeping.

- *More Scope for Artistic Creativity.* Museum directors are similarly bound by artistic conventions. The particular hanging of pictures at many museums has become part of the cultural

heritage, and it is next to impossible to rearrange the permanent collection to any significant extent. Special exhibitions offer a chance to evade such historical restrictions. One of the major tasks and potentials of an art exhibition is to arrange the art objects in a way which creates new insights and effects. In addition, the assembly of art objects coming from many different permanent collections provides a much-sought after challenge to the museum directors, curators, exhibition and graphic designers, conservators, editors and managing officers, to exert their artistic creativity and sense of innovation, and possibly to raise controversy - aspects which are highly valued by museum people for their own sake, but also because it is beneficial for their career.

- *Evading Government and Trade Union Regulations.* Cultural institutions' freedom to act is restricted by two major institutions, the government and the trade unions. Government restrictions go far beyond budgetary affairs. They hinder the art institutions' way of acting and performing in a myriad of ways. Thus, pricing policy is greatly restricted, as well as opening times (for many examples see e.g. Börsch-Supan, 1993: 11, 15). In view of the strong hand of the government, and its persistence due to a long tradition, the major possibility of evading these regulations is to engage in special events.

Special exhibitions provide a good opportunity for directors of art museums to appropriate at least part of the extra revenue generated. Being an extraordinary event, the museum directors are in a good bargaining position vis-à-vis the public budgetary authorities to keep some discretion over these funds, and not to be fully 'punished' by a reduction in future budget allocations.

One of the most stringent public regulations imposed on public art institutions pertains to government sector employment. The virtual impossibility of dismissing inefficient or downright destructive employees, of promoting and paying employees according to performance, and adjusting working hours to needs are major factors reducing creative endeavours and turning art institutions into mere bureaucracies. Additional regulations have been pushed through by the trade unions, and are often fully supported by the government. Special exhibitions make it possible to evade at least some employment restrictions, especially as most of the respective employees are only part-time and temporary, are not union members, and are therefore not legally bound by trade union regulations.

- *More Sponsoring*. Politicians and public officials have an interest in special exhibitions. They not only respond to the respective demands of the arts world and the local business community, but it gives them an excellent opportunity to appear in the media as 'patrons of the arts' (with tax payers' money). Business is also more prepared to sponsor special exhibitions than regular activities, where legal provisions often hinder sponsoring. The most important reason is certainly the higher media attention of these events and their particular contribution, but also that an individual firm has more control of the funds contributed, and sees less of it wasted by an inefficient bureaucracy as is the case with opera houses or art museums. Sponsors 'want a well-defined, high quality event aimed at specific audience' (The Economist, 5 Aug. 1989). For the reasons given above, the corporate sponsors also feel that their contributions add to cultural output, and do not simply induce the government to provide less subsidies.

As special exhibitions become the rule rather than the exception, there is pressure to have them carry the whole cost, and to subject them to the same government and trade union regulations as the other museum activities. Even if the rapid rise in special exhibitions cannot be expected to persist, they have had a strong and lasting impact on the art world. On the demand side, it has opened up art to an increasing number of the population. This 'popularisation' may not be in the interests of some art suppliers and art lovers, but from the point of view of caring for individual preferences, it is a considerable achievement. On the supply side, the increased competition between producers of art has transformed career patterns at museums, and has led to a new relationship to potential and actual art consumers. By subjecting art producers at least partly to the market, it has also favoured more efficient forms of organisation and production in the world of art.

6. Conclusion

This article about the economics of museums treats different aspects of the 'production' of museum services. From an economic point of view, two different approaches can be distinguished: firstly, museums may be looked at as an economic unit where inputs and outputs can be analysed; secondly, the economic way of thinking can be applied to museums and the individuals (directors, curators, politicians, ...) connected with it. Individuals are then assumed to pursue their utility within the constraints imposed by institutions and the environment. The article

discusses the demand and supply side of museums, the behaviour of museums, and the phenomena of superstar museums and special exhibitions as two recent trends in the museum world.

Emphasis is put on the behaviour of museums. The behaviour of the museum staff is guided by the institutional setting. According to this theory, the main source of funds can have a huge impact on the behaviour of the museum. The museum staff's decision to raise income through ancillary services, to manage their collection on the market, or to set the entry fees depend crucially on the ownership of the museum. A distinction is made between private and public museums and museums dependent on donations.

A worthwhile goal for future research is to more fully understand how the changing conditions of museums, e.g. with respect to government support and changing leisure activities influence the behaviour of the museums. How will museums adapt to the new situation? The rise of superstar museums and the reliance on more special exhibitions are two such developments. However, there may be more changes in the production of museum services.

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